Rubric Discussion Points

- *Describe the effect each of the P, I, D components had in your implementation.*

The PID controller is a control loop feedback mechanism that calculates continuously an error value e(t) and corrects based on proportional, integral and derivative terms. The proportional component causes the car to steer proportional to the car's distance from the lane center (also called the CTE), in this case if the car is too far to the right then it makes a hard move to the left, if is just a little bit to the right then the output is a smooth move to the left. The differential component counteracts the proportional component to ring and overshoot the center line, in the case of a proper tune Differential parameter is going to achieve a smoothly the line center without ringing. Finally the integral component counteract a bias that prevents the controller from reaching the center line.

- *Describe how the final hyperparameters were chosen.*

The hyperparameters were chosen by hand, following David Silver Q&A session on Youtube I could set the PID variables as follows -0.1 0 -0.5. That combinations performed very well on the simulator achieving staying on the track for all the time and a good position close to the middle of the track.